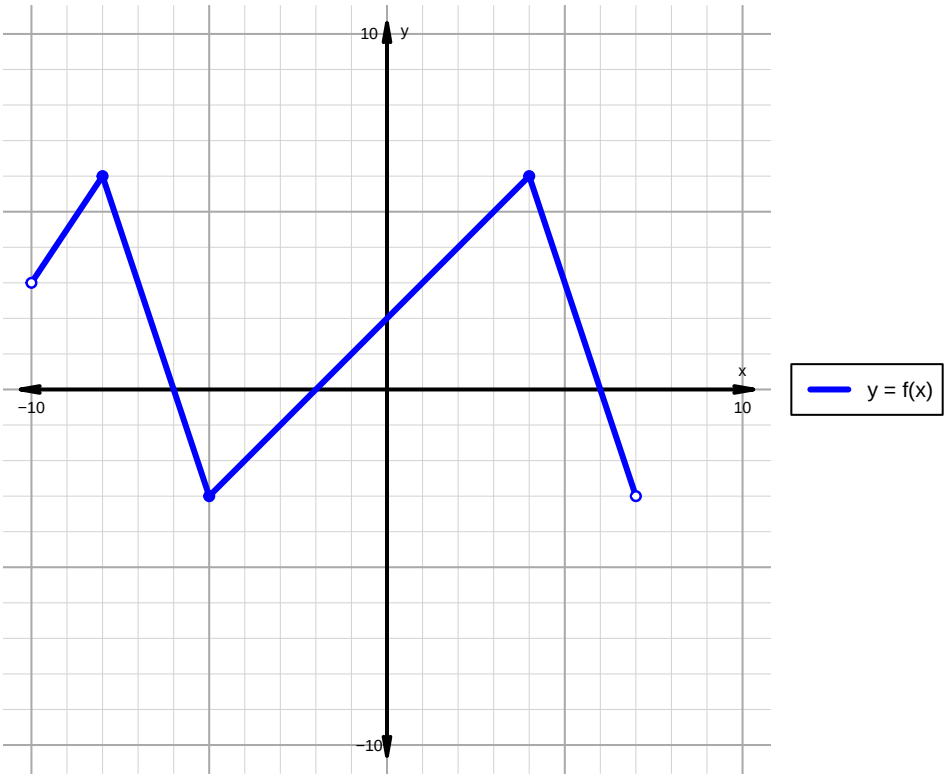
Name: Date:

Intervals, Transformations, and Slope Solution (version 143)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-10,-6)\cup(-2,6)$
Negative	$(-6,-2)\cup(6,7)$
Increasing	$(-10,-8)\cup(-5,4)$
Decreasing	$(-8,-5)\cup(4,7)$
Domain	$(-10,7)$
Range	$(-3,6)$

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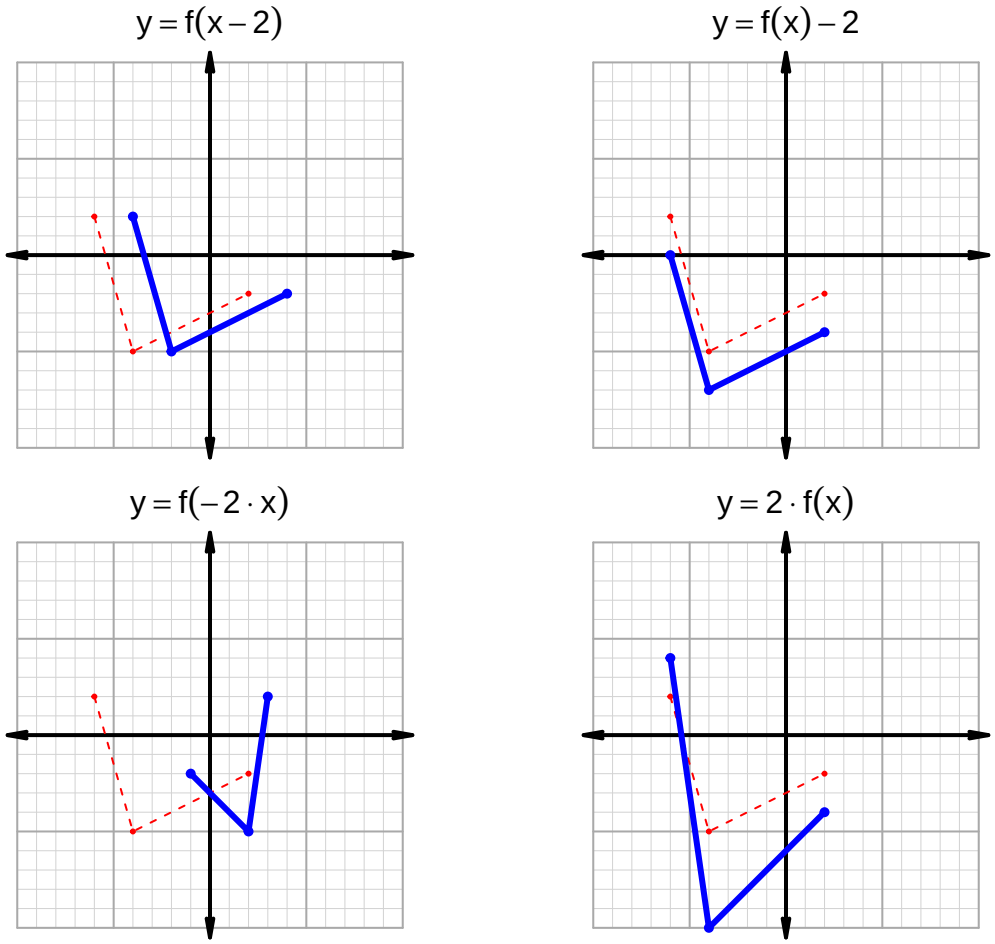
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 40$ and $x_2 = 52$. Express your answer as a reduced fraction.

x	$g(x)$
23	52
40	23
52	77
77	40

$\frac{f(52)-f(40)}{52-40} = \frac{77-23}{52-40} = \frac{54}{12}$

The greatest common factor of 54 and 12 is 6. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{9}{2}$$